STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION OF THE CITY OF BOONVILLE, INDIANA FOR AUTHORITY TO ISSUE BONDS AND FOR THE APPROVAL OF A NEW SCHEDULE OF RATES AND CHARGES	)))))	CAUSE NO. 43477

FILED

JUN 0 2 2008

INDIANA UTILITY
REGULATORY COMMISSION

PREFILED DIRECT TESTIMONY
OF
BRIAN A. BULLOCK, P.E.

ON BEHALF OF PETITIONER
CITY OF BOONVILLE, INDIANA

PREFILED DIRECT TESTIMONY
OF
BRIAN A. BULLOCK, P.E.
IURC CAUSE NO. 43477

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Brian A. Bullock. My business address is Midwestern Engineers, Inc., P.O. Box 295, 802 West Broadway Street, Loogootee, Indiana 47553

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Project Engineer and Principal of Midwestern Engineers, Inc.

Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A. I am appearing on behalf of the City of Boonville, Indiana, the Petitioner in this proceeding (the "City").

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I am a graduate engineer of the University of Evansville, with a B.S. in Civil Engineering.

Q. PLEASE BRIEFLY DESCRIBE YOUR PROFESSIONAL BACKGROUND AND YOUR FIRM'S QUALIFICATIONS.

A. I am a registered professional engineer in the State of Indiana. I have personally designed and prepared plans and specifications, developed funding alternatives including bonding, developed operating budgets, and assisted in the actual construction of various water and wastewater facilities. Projects that I have designed and certified plans for are South Lawrence Utilities, Town of Odon, Town of Switz City, Crawford County Water Company, Town of Leavenworth and Dubois Water Utilities. I was the design Engineer and project manager for the Phase I Water System Improvements that received IURC approval in 2006. I have also designed numerous water improvement projects under the supervision of other Professional Engineers, which include projects for North Lawrence Water Authority, Town of Patoka, City of Cannelton, Pike-Gibson Water, Town of Corydon, Stucker Fork Conservancy District and City of Loogootee. For 49 years,

Midwestern Engineers has been involved in the development, including design, funding, and construction of numerous facilities for rural water corporations, conservancy districts and municipalities throughout the State of Indiana. I am an active member in the American Waterworks Association and American Council of Engineering Companies of Indiana.

Q. IS YOUR FIRM CURRENTLY EMPLOYED BY THE CITY?

A. Yes, it is.

Q. PLEASE DESCRIBE YOUR FIRM'S WORK FOR THE CITY.

A. The City asked Midwestern Engineers to prepare a comprehensive study of the City's waterworks existing water system ("Utility") and recommend necessary capital improvements. We prepared the Preliminary Engineering Report for Water System Improvements for the City of Boonville, Warrick County, Indiana in 2004 (the "Preliminary Engineering Report") that identified numerous areas of the Utility that were in need of improvement and recommended a specific capital improvement program. The Preliminary Engineering Report is identified as Petitioner's Exhibit No. BAB-1. We later prepared Addendum No. 1 to the Preliminary Engineering Report in August 2005. Addendum No. 1 outlined improvement that were to be completed in Phase I and that were part of the last IURC rate case. The 2005 Addendum No. 1 is identified as Petitioner's Exhibit No. BAB-2. We subsequently prepared Addendum No. 2 to the Preliminary Engineering Report in April 2008 ("2008 Addendum No. 2"). The 2008 Addendum No. 2 outlines the improvements that are proposed to be completed in Phase II and will be part of this IURC rate case. It also outlines improvements that are required to wholesale water to the Yankeetown Water Authority. The 2008 Addendum No. 2 is identified as petitioner's Exhibit No. BAB-3.

Q. WOULD YOU PLEASE DESCRIBE THE PRELIMINARY ENGINEERING REPORT AND ITS ADDENDA?

A. Page 1 of the Preliminary Engineering Report serves as the Executive Summary. Chapter 1 discusses the location of the project area and the planning area for Boonville. The existing water facilities are described in detail with their respective need for improvements in Chapter 2. The facilities are broken out into supply, treatment, storage and distribution. Chapter 3 presents the historical population data, projected populations, historical water production, significant users and projected demands of the system. Chapter 4 discusses the evaluation of alternatives. These included the no action, optimum operation of existing facilities, water supply improvements, new water treatment plant, water storage improvements and water distribution improvements. The evaluation of environmental impacts is discussed in Chapter 5. Chapter 6 presents the selected plan. This chapter also presents the probable project costs and preliminary design summary for the entire project. Chapter 7 and 8 consist of requirements of the State Revolving Fund such as resolutions, financing information, and public participation. The final page presents our conclusions and recommendations.

Page 1 of Addendum No. 1 presented different phasing for these improvements that were part of the last rate case.

Page 1 of the 2008 Addendum No. 2 presents different phasing for the improvements that are part of this rate case.

Q. WAS THE SCOPE OF THE PROJECT NARROWED FOR PURPOSES OF THE LAST RATE CASE?

A. Yes, after discussions between the City and their professional advisors, the City elected to proceed with a portion of the overall project in order to meet the immediate needs of the water system. This portion was set forth in Addendum No. 1 to the Preliminary Engineering Report identified as Petitioner's Exhibit No. BAB-2. The City received approval of bond financing to fund the construction as described in Addendum No. 1.

Q. IS YOUR FIRM PREPARING CONSTRUCTION PLANS AND SPECIFICATIONS?

A. Yes, construction plans and specifications are being prepared under my supervision. It is anticipated that those plans and specifications will be completed by July 2008.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to describe: (1) the proposed water system improvement projects for which the City is seeking authority to finance with bonds; (2) the need for the proposed project; and (3) the estimated project costs that can be expected as a result of the proposed project.

Q. PLEASE DESCRIBE THE UTILITY'S EXISTING WATER SYSTEM.

A. Water for the City of Boonville is currently provided by four wells located approximately 5 miles Southeast of the City Limits. Wells #5, #7 and #8 have rated capacities of 600 GPM. Well #6 is approximately 250 GPM. A new 18-inch transmission main was installed from the well field to the City's distribution system in 2006-07 and was part of the last rate case. This increased the well field capacity to 2,000 GPM with the largest well out of service. Therefore, the total capacity of the well field is 2,880,000 GPD over a full day. The wells pump to a 575,000 gallon clearwell.

A raw water booster station then pumps water to the treatment plant. The pumps in the raw water booster station have been rebuilt numerous times. This booster station is also capable of producing 2,000 GPM or 2,880,000 GPD over a full day.

The water treatment facility for the City of Boonville is located in the middle of the City, just South of Moore Street and West of Owensboro Road. The treatment plant was constructed in 1976 with improvements being made in 1991. It consists of six (6) vertical manganese greensand pressure filters. Four of these filters were installed as part of the original plant and two were installed in 1991. These filters have a rated capacity of 325 GPM and a design operating pressure of 100 psi. The four original filters had their media replaced in 1995. Water is pumped from the raw water booster station through approximately 4 miles of 18-inch raw water main, then through the filters into a clearwell at the existing plant site. This clearwell has a capacity of 1.6 million gallons. The finished water is then pumped by the high service pumps into the distribution system and the water storage tanks. These high service pumps were installed with the original plant in 1976. Both pumps have a reported capacity of 1,500 GPM. The capacity of the treatment facility is 2.16 MGD. The high service pumps at the water treatment facility are nearly 32 years old and have been rebuilt at least four times. The majority of the treatment facilities are over 30 years old and are reaching the end of their useful life and additional capacity will be required in order to meet future peak demands.

There are three (3) water storage tanks providing a total of 1,500,000 gallons of storage for the City. The South storage tank is a 500,000 gallon elevated tank with an overflow elevation of 564.41 feet above sea level. This tank was constructed in 1966 and was

repainted in 1998. The North storage tank is also a 500,000 gallon elevated tank with an overflow elevation of 566.29 feet above sea level. It was constructed in 1998. The West storage tank is also a 500,000 gallon elevated tank with an overflow elevation of 564.72. This tank was constructed in 2006-07 and was part of the last rate case. The mean average daily demand for the system over the last 5 years is 1.1 MGD. As a general rule of thumb, the storage capacity should be one to two days of usage.

Boonville's distribution facilities consist of over 50 miles of mostly 2-inch through 10-inch water mains. The majority of the distribution system consists of cast iron water mains. More recently constructed mains are PVC or ductile iron. There are some older asbestos cement water mains within the system. There are only two (2) finished water booster stations. The Eby Road booster station has a reported capacity of 40 GPM and is located at the intersection of Eby Road and Folsomville Road. It pumps water to the higher terrain area on the North side of the City. The other booster station is located on Mt. Gilead Road and has a capacity of 60 GPM. It pumps water to the higher terrain area on the south side of the City. This booster station was also constructed in 2006-07 and was part of the last rate case. The high service pumps at the water treatment plant, which are controlled by telemetry at the South tank, pump water directly into the distribution system.

Q. PLEASE DESCRIBE THE CITY'S PLANNING AREA AND THE HISTORICAL AND PROJECTED POPULATION.

A. The City of Boonville's water planning area includes the entire City as well as areas outside of the City limits. This area extends approximately 4 miles north of the City limits to Greenbriar Road, 2.5 miles east of the City limits, 4.5 miles south of the City limits to

the Warrick-Spencer County line and 0.2 miles to the west of the City limits. This area is primarily contained in Boon Township. A small portion of the planning area North of the City Limits is in Hart Township. I refer you to Page 3 of the Preliminary Engineering Report for a map of this area. The population for the City of Boonville increased from 6,200 to 6,834 from 1980 to 2000, Boon Township increased from 11,420 to 12,844 for the same time period, and Warrick County increased from 41,474 to 52,383 for the same time period. Please refer to Page 12 of the Preliminary Engineering Report for the historical population data. The City of Boonville's population has increased by 8.5%, Boon Township's population has increased by 12.5%, and Warrick County's population has increased by 26.3%. According to projections by the Indiana Business Research Center, Boon Township's population is projected to increase by 8.0% from the year 2000 to 2020 and Warrick County's population is projected to increase by 12.7%.

Q. PLEASE IDENTIFY CURRENT AND PROJECTED WATER DEMANDS ON THE UTILITY.

A. The mean peak daily demand for the last five years is 1.59 MGD and the mean average daily demand is 1.1 MGD. The City of Boonville currently serves approximately 3,700 water customers. Approximately 97% of these customers are residential. The average per capita usage for Boonville is 300 GPD/customer (1,100,000 GPD/3,700 customers). Boonville has experienced little population growth over the last several years while outside of the City Limits, new residential development has occurred. This trend will likely continue. Long-term growth potential in the planning area was evaluated by assessing how much of the planning area could be developed into residential lots. Approximately 9,000 acres of developable land is located within the planning area. Given the City's location near Evansville, it is very likely that a third of this area will be

developed over the next 20 years. Using Quail Crossing development near Boonville as an example, the potential number of lots per acre will be 1.6. Long term, Boonville should anticipate residential growth of 4,800 lots. This equates to a customer base of 8,500 customers in the year 2024. Therefore, the projected average daily demand in the year 2024 will be 2,550,000 GPD (8,500 customers x 300 GPD/customer); and the projected peak daily demand is 3,570,000 GPD. A peaking factor of 1.4 was used to calculate the projected peak daily demand. This peak factor is typical of what the water system has experienced the past five years.

Q. PLEASE DESCRIBE THE PROPOSED CAPITAL IMPROVEMENTS FOR WHICH THE CITY IS SEEKING FINANCING AUTHORITY IN THIS PROCEEDING.

A. Phase II will consist of construction of two (2) new 500 GPM wells adjacent to the existing well field. This will increase the capacity of the well field to 3,000 GPM with the largest well out of service. New meters will also be installed on the existing wells. A new 3,000 GPM water treatment plant will also be constructed as part of this phase. The third part of the project is to sandblast and repaint the existing south 500,000 gallon elevated water storage tank located adjacent to the hospital. All of these improvements were included in the original Preliminary Engineering Report with the exception of re-painting the existing water storage tank. All of the maps and site plans for the project that were submitted in the original Preliminary Engineering Report remain unchanged. Also the design summary is unchanged. The Yankeetown Water Authority has approached the City to inquire about purchasing 100,000 GPD of water from Boonville. In order to supply Yankeetown water, Boonville will have to install pumps in the new water treatment plant dedicated to pump to Yankeetown. It will also have to construct an 8-inch water main to connect the two (2) systems and will also include a new meter pit. It will be designed so that Yankeetown could sell Boonville water in an emergency situation.

Q. BASED UPON YOUR EXPERIENCE AND YOUR INVESTIGATION AND STUDY OF THE UTILITY'S EXISTING SYSTEM, DO YOU HAVE AN OPINION AS TO WHETHER THE PROPOSED CAPITAL IMPROVEMENTS TO THE CITY'S WATER SYSTEM ARE NECESSARY IN ORDER FOR THE CITY TO PROVIDE REASONABLY ADEQUATE WATER SERVICE TO ITS CUSTOMERS?

A. Yes, I do.

Q. WHAT IS THAT OPINION?

A. The City's proposed capital improvements are necessary to continue to provide adequate and reliable water service to its customers. The specific improvements and the respective need therefore are described in detail on pages 4 through 14 of the Preliminary Engineering Report and in 2008 Addendum No. 2.

Q. HAVE YOU PREPARED A PRELIMINARY COST ESTIMATE FOR THE PROPOSED CAPITAL IMPROVEMENTS?

A. Yes. The total proposed cost summary is set forth in the 2008 Addendum No. 2, and totals $7,600,000.00 for the Phase II Improvements and $540,000.00 for the Yankeetown Improvements.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

IURC Cause No. 43477

File Date: 6/2/08

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Additional Notes:

BAB-2

ADDENDUM NO. 2

TO THE

PRELIMINARY ENGINEERING REPORT

FOR

WATER SYSTEM IMPROVEMENTS

FOR THE

CITY OF BOONVILLE

WARRICK COUNTY, INDIANA

APRIL 2008

REVISED: May 30, 2008

I. Purpose of Report

The purpose of the report is to revise the scope of the phases that were outlined in the original Preliminary Engineering Report dated August 2004 and the Addendum No. 1 to the PER dated August 2005. Phase I consisted of construction of the 18-inch transmission main from the existing well field to the raw water booster station then to the existing water treatment plant. A new booster station was also constructed in the first phase to eliminate the documented low pressure areas along Mt. Gilead Road. This phase also consisted of installing new 6-inch water mains along SR 61, Lovers Lane, Homestead Drive, Orchard Drive and Stonehaven Circle to increase flow capabilities to this area on the North side of the City. The last part of the first phase was construction of a new 500, 000 gallon elevated water storage tank on the City's southwest side. This included construction of 10-inch and 8-inch reinforcement mains in this area. Phase II will consist of construction of two (2) new 500 gpm wells adjacent to the existing well field. This will increase the capacity of the well field to 3,000 gpm with the largest well out of service. New meters will also be installed on the existing wells. A new 3,000 gpm water treatment plant will also be constructed as part of this phase. The third part of the project is to sandblast and repaint an existing 500,000 gallon elevated water storage tank located adjacent to the hospital. All of these improvements were included in the original PER with the exception of re-painting the existing water storage tank. All of the maps and site plans for the project that were submitted in the original PER remain unchanged. Also the design summary is unchanged.

The Yankeetown Water Authority has approached the City to inquire about purchasing 100,000 GPD of water from Boonville. In order to supply Yankeetown water, Boonville will have to install pumps in the new water treatment plant dedicated to pump to Yankeetown. It will also have to construct an 8-inch water main to connect the two (2) systems and will also include a new meter pit. It will be designed so that Yankeetown could sell Boonville water in an emergency situation.

II. Cost Estimates

Cost Estimates for the Phase II and the Yankeetown project are included on the next pages.

PROBABLE PROJECT COST
FOR
WATER SYSTEM IMPROVEMENTS - PHASE II
FOR THE
CITY OF BOONVILLE
APRIL, 2008

I. PROBABLE CONSTRUCTION COSTS - WELL FIELD IMPROVEMENTS

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE	TOTAL PRICE
1.	NEW 500 GPM WELLS	2	EA.	$170,000.00	$340,000.00
2.	16" D.I. WATER MAIN W/POLY. ENCASEMENT	600	L.F.	$60.00	$36,000.00
3.	12" D.I. WATER MAIN W/POLY. ENCASEMENT	500	L.F.	$50.00	$25,000.00
4.	PORTABLE GENERATOR	1	L.S.	$60,000.00	$60,000.00
5.	ABANDON OLD WELL FIELD	1	L.S.	$20,000.00	$20,000.00
6.	EXISTING WELL FIELD IMPROVEMENTS	1	L.S.	$20,000.00	$20,000.00
				SUB-TOTAL	**$501,000.00**
				CONTINGENCIES	$49,000.00
	TOTAL PROBABLE CONSTRUCTION COSTS - WELL FIELD IMPROVEMENTS				**$550,000.00**

II. PROBABLE CONSTRUCTION COSTS - NEW WATER TREATMENT PLANT

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE	TOTAL PRICE
1.	NEW WATER TREATMENT PLANT	1	L.S.	$5,160,000.00	$5,160,000.00
				SUB-TOTAL	**$5,160,000.00**
				CONTINGENCIES	$520,000.00
	TOTAL PROBABLE CONSTRUCTION COSTS - NEW WATER TREATMENT PLANT				**$5,680,000.00**

III. PROBABLE CONSTRUCTION COSTS - RE-PAINTING EXISTING WATER STORAGE TANK

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE	TOTAL PRICE
1.	SANDBLAST & RE-PAINT EXISTING 500,000 GALLON ELEVATED WATER STORAGE TANK	1	L.S.	$225,000.00	$225,000.00
				SUB-TOTAL	**$225,000.00**
				CONTINGENCIES	$25,000.00
	TOTAL PROBABLE CONST. COSTS - RE-PAINTING EXISTING WATER STORAGE TANK				**$250,000.00**
	TOTAL PROBABLE CONSTRUCTION COSTS				**$6,480,000.00**

IV. PROBABLE NON-CONSTRUCTION COSTS

1.	ENGINEERING	$450,000.00
2.	INSPECTION	$185,000.00
3.	LEGAL, BOND COUNSEL & ISSUANCE COSTS	$280,000.00
4.	RATE ACCOUNTANT	$100,000.00
5.	SOIL BORINGS & PERMITS	$33,000.00
6.	LAND FOR NEW WELL FIELD	$72,000.00
	TOTAL PROBABLE NON-CONSTRUCTION COSTS	**$1,120,000.00**

V. TOTAL PROBABLE PROJECT COSTS $7,600,000.00

PROBABLE PROJECT COSTS
FOR
YANKEETOWN WATER MAIN EXTENSION
FOR THE
CITY OF BOONVILLE

MARCH 2007

REVISED: FEBRUARY 2008

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY		ESTIMATED UNIT PRICE	ESTIMATED TOTAL PRICE
1.	8" PVC, C-900 WATER MAIN	10,000	L.F.	$28.00	$280,000.00
2.	8" CREEK CROSSING	60	L.F.	$60.00	$3,600.00
3.	FIRE HYDRANTS W/6" GATE VALVES	3	EA.	$2,500.00	$7,500.00
4.	8" GATE VALVE	5	EA.	$800.00	$4,000.00
5.	10" x 8" WET TAP	1	EA.	$2,500.00	$2,500.00
6.	BLACK TOP RESURFACING	60	L.F.	$25.00	$1,500.00
7.	"B" BORROW BACKFILL	100	TONS	$10.00	$1,000.00
8.	NEW HIGH SERVICE PUMPS & PIPING	1	L.S.	$50,000.00	$50,000.00
9.	NEW MASTER METER PIT	1	L.S.	$60,000.00	$60,000.00
				SUB-TOTAL	**$410,100.00**
				CONTINGENCIES	$40,900.00
				TOTAL PROBABLE CONSTRUCTION COST	**$451,000.00**
				TOTAL PROBABLE NON-CONSTRUCTION COST	$89,000.00
				TOTAL PROBABLE PROJECT COST	**$540,000.00**

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BAB-1